

Appl. No. 09/706,937  
Amdt. dated April 19, 2004  
Reply to Office action of December 19, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

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Claim 1 (currently amended): An index for data that represent geographic features comprising:

- a structure that includes three dimensions,
- wherein a first dimension of said three-dimensions includes latitude boundary information, a second dimension of said three dimensions includes longitude boundary information, said first dimension and second dimension are searchable spatially,
- wherein a third dimension includes non-spatial property information, said third dimension is searchable for a non-spatial property of the geographic features represented by the data.

Claim 2 (previously presented): An index for data that represent geographic features comprising:

- a structure that includes two spatial dimensions and a non-spatial third dimension,
- whereby said data indexed by said structure are searchable spatially using said two spatial dimensions,
- whereby a non-spatial property of the data that represent the geographic features is searchable using said third dimension.

Claim 3 (original): The invention of Claim 1 or 2 wherein said structure is a  $k$ -d-tree index structure comprising a root node, intermediate nodes and leaf nodes, wherein each node is part of a parent-child relationship wherein each parent node includes control information from which one of at least two child nodes associated with the parent node are distinguishable based on a search key.

Claim 4 (original): The invention of Claim 1 or 2 wherein said improved index is homogeneous.

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Claim 5 (original): The invention of Claim 1 or 2 wherein said improved index is non-homogeneous.

Claim 6 (original): The invention of Claim 1 or 2 wherein said geographic features are roads.

Claim 7 (previously presented): The invention of Claim 1 wherein said non-spatial property is a rank of the geographic features represented by the indexed data.

Claim 8 (original): The invention of Claim 7 wherein said rank includes both integers and fractional values.

Claim 9 (previously presented): The invention of Claim 2 wherein said non-spatial property is a granularity of the indexed data.

Claim 10 (previously presented): The invention of Claim 2 wherein said non-spatial property is a viewing altitude associated with the indexed data.

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Claim 11 (previously presented): The invention of Claim 2 wherein said non-spatial property is a scale associated with the indexed data.

Claim 12 (previously presented): The invention of Claim 2 wherein said non-spatial property is an expiration date associated with the indexed data.

Claim 13 (previously presented): The invention of Claim 2 wherein said non-spatial property is a creation date associated with the indexed data.

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Claim 14 (currently amended): An index for data comprising:

c1 a structure that includes a first dimension, a second dimension and a third dimension,  
wherein said first dimension includes latitude boundary information,  
wherein said second dimension includes longitude boundary information,  
whereby said data indexed by said structure are searchable using said first and second  
dimensions,  
wherein said third dimension includes granularity information of the indexed data,  
whereby a granularity of the indexed data is searchable using said third dimension.

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